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The Sugar Maple Borer

by Harvey J. MacAloney

The sugar maple borer, *Glycolbus speciosus* (Say), is generally considered to be the most injurious insect pest of sugar maple, *Acer saccharum* Marsh. Although intermediate or codominant trees of low vigor may be preferred, vigorous trees from sapling to mature size are attacked. The frequency of attack increases with tree diameter. Trees in heavily grazed open woodlands and sugarbush areas are subject to severe borer damage.

Sugar maple is the only known host of the borer. The insect is found throughout the range of the host tree—most of the Eastern United States and adjacent Canada, south into the southern Appalachian Mountains, and west to Minnesota. In its southern range the borer is more frequently found at higher elevations. It also causes considerable destruction where sugar maple is used as a shade tree.

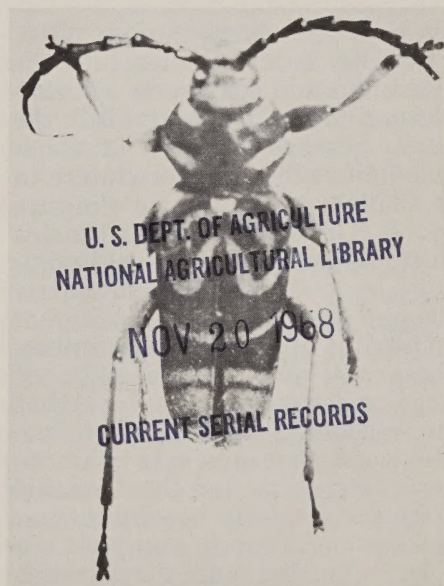
Description and Life History

The adult is a stout black beetle, about 1 inch long, with yellow markings (fig. 1). The head is bright yellow; the thorax has two parallel yellow bands on each side, not joined at the middle; and the wing covers have

five dark yellow bands, the middle one near the base being shaped like a W. The tips of the wing covers are yellow, except for a small black spot at the center of each.

The rosy-white cylindrical larva, when fully grown, may be 2 inches long. The legs are minute and the mouth parts brownish. The elongate whitish eggs are about one-eighth of an inch long.

Beetle activity begins late in the spring. The adults are fairly long lived, producing eggs from mid-June into August; most eggs are laid in natural cracks or crevices in the bark on the lower 30 feet of the bole or near the



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Figure 1.—Adult sugar maple borer.

¹ Principal entomologist (deceased), North Central Forest Exp. Sta. The station is maintained at St. Paul, Minn., by the Forest Service, USDA, in cooperation with the University of Minnesota.

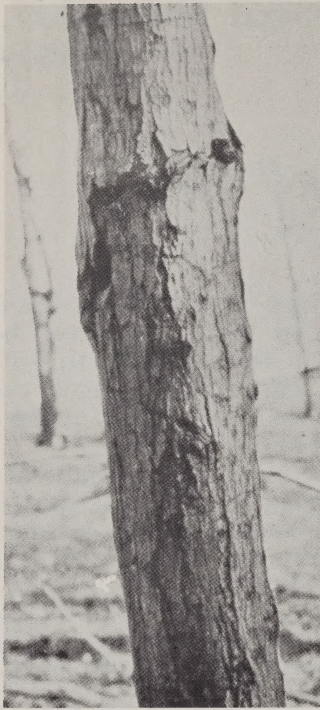


Figure 2.—Transverse ridges on the bark surface, indicating attack by the sugar maple borer. (Courtesy New York State University, College of Forestry at Syracuse University.)

base of the large limbs. After hatching, a larva bores into the cambium and constructs a meandering mine. By early fall the larva reaches a length of about one-half inch and overwinters in a shallow excavation in the sapwood. The second year it tunnels just under the bark, longitudinally or transversely and partly around the bole or branch, but generally upward. These tunnels interrupt the translocation of food and water. As cold weather approaches, the larva bores into the wood, first obliquely in an upward direction, and then parallel with the grain for several inches; at this location it constructs a pupal chamber and overwinters. The beetle emerges the next spring, thus completing a 2-year cycle.

Evidence of Attack and Damage

New attacks may be detected by small discolored wet spots due to sap leakage, or by frass on the bark. Later, attack is made evident externally by transverse, spiral, or longitudinal ridges on the bark (fig. 2). These ridges persist for many years. Removal of the bark will usually show a gallery or galleries on the wood surface. Often where callus tissue forms over the galleries, the bark breaks away leaving an exposed area, which may become an entrance court for stains or wood-rotting fungi (fig. 3). Defect and degrade are the result. Successful attack on a branch may cause death of the branch, premature foliage discoloration, and finally branch breakage. Stem breakage in small trees may also occur at or near a point where the gallery has partly or wholly encircled the stem (fig. 4).

Control

Prevention of damage by the sugar maple borer in forest areas requires good silvicultural practice. All-aged stands should be cut selectively to remove the larger trees and maintain tree vigor and good crown cover. In cutting even-aged stands, all the large trees should be harvested, since they are subject to the most borer damage. Heavily infested trees, those with dead main branches or crown dieback in open woodland or sugarbush areas, should be removed.

Shade trees should be carefully inspected semiannually for signs of attack—wet spots or frass on the bark, or cracks in the bark. When such signs are located, the borers can be killed by squirting carbon disulfide into the holes or cracks and plugging them with



Figure 3.—Exposed larval galleries, possible entrance courts for stain or wood-rotting fungi: A, Open wet wounds (courtesy of Canada Department of Forestry), B, callus tissue formed over an old gallery (courtesy of New York State University, College of Forestry at Syracuse University).



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Figure 4.—Stem breakage caused by attack by the sugar maple borer.

putty or grafting wax. Spraying or brushing a penetrating insecticide such as orthodichlorobenzene on the wet spots or cracks will also kill the larvae. Dead or dying branches should be pruned well below the area of attack and burned.

Caution

Insecticides used improperly may be injurious to humans, plants, and animals. They may also contaminate water supplies. Exercise care in their use, and store them in plainly labeled containers out of reach of children and away from food. The manufacturers' directions for using these materials should be carefully followed. Dispose of containers and unused chemicals, so that they will not be a hazard to man, animals, or water.

References

Sugar maple borer. H. I. BALDWIN.
Important tree pests of the North-
east. New England Sect., Soc. Amer.
Forest. pp. 77-79, illus. 1952.
Insect enemies of eastern forest. F. C.
CRAIGHEAD. U.S. Dept. Agr. Misc.
Pub. 657, pp. 269. 1950.

Insects of Wisconsin forests. ROY D.
SHENEFELT and D. M. BENJAMIN.
Wisconsin Univ. Circ. 500, pp. 92-93.
1955.

A study of damage caused by the sugar
maple borer. R. L. TALERICO. J.
Forest. 60: 178-180, illus. 1962.



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